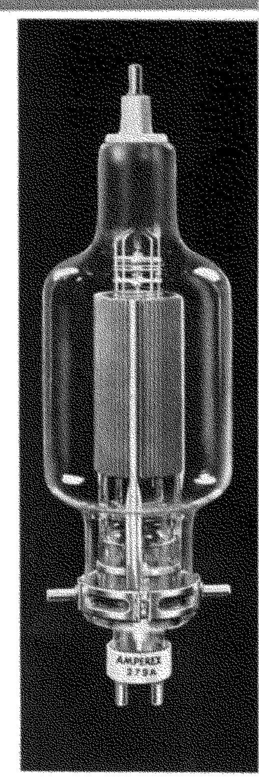
Radio Frequency Power Amplifier or Oscillator
Audio Frequency Power Amplifier or Modulator



MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

A.F. Power Amplifier or Modulator—Class A

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	—	10	10
D.C. Plate Voltage	2500	2500	2000
D.C. Grid Voltage	—	—170	—110
Peak A.F. Grid Voltage	—	165	105
D.C. Plate Current (ma.)	—	300	375
D.C. Plate Input (watts)	750	750	750
Plate Dissipation (watts)	750	750	750
Load Resistance (ohms)	—	4500	2000
Power Output (watts)	—	155	90
Distortion (% Second Harmonic)		5	5

A.F. Power Amplifier or Modulator—Class B

	Maximum Rating per Tube	Typical Operation Two Tubes	
A.C. Filament Voltage	—	10	10
D.C. Plate Voltage	2500	2500	2000
D.C. Grid Voltage	—	—200	—150
Load Resistance (ohms per tube)		700	560
Effective Load Resistance (Plate to Plate) (ohms)	—	2800	2240
Zero Signal Plate Current (ma.)	—	300	260
Peak A.F. Grid to Grid Voltage	—	870	820
Max. Signal Plate Current (ma.)	1000	1600	1600
Max. Signal Plate Input (watts)	2500	4000	3200
Plate Dissipation (watts)*	1200	—	—
Minimum Grid Input Resistance (ohms)	—	600	500
Max. Signal Driving Power (watts)		20	35
Max. Signal Plate Power Output (watts)		2200	1760

*Averaged over any audio frequency cycle of sine-wave form

R.F. Power Amplifier—Class B—Telephony

(Carrier conditions for use with a maximum modulation factor of 1.0)

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	—	10	10
D.C. Plate Voltage	3000	3000	2500
D.C. Grid Voltage	—	—250	—200
Plate Load Resistance (ohms)	—	1680	1140
Peak R.F. Grid Voltage	—	305	310
D.C. Plate Current (ma.)	800	500	600
Plate Input (watts)	1800	1500	1500
Plate Dissipation (watts)	1200	980	990
D.C. Grid Current (Approx.) (ma.)	—	3	4
Driving Power (Approx.) (at peak modulation) (watts)	—	38	60
Plate Power Output (watts)	—	520	510
Frequency Limit for Above Operation (mc.)	20	20	20
F.C.C. Broadcast Rating (watts)	500	500	500

GENERAL CHARACTERISTICS

Dimensions:	
Maximum Overall Length	21 11/16"
Maximum Diameter	6"
Mounting:	
W.E. 142A or Similar Socket	
Filament Voltage	10
Filament Current (amps)	21
Amplification Constant	10
Grid to Plate Transconductance at 300 Ma. Plate Current	5400 micromhos
Direct Interelectrode Capacitances:	
Grid to Plate	18 $\mu\mu f$
Grid to Filament	14 $\mu\mu f$
Plate to Filament	6 $\mu\mu f$

Plate Modulated R.F. Power Amplifier Class C—Telephony

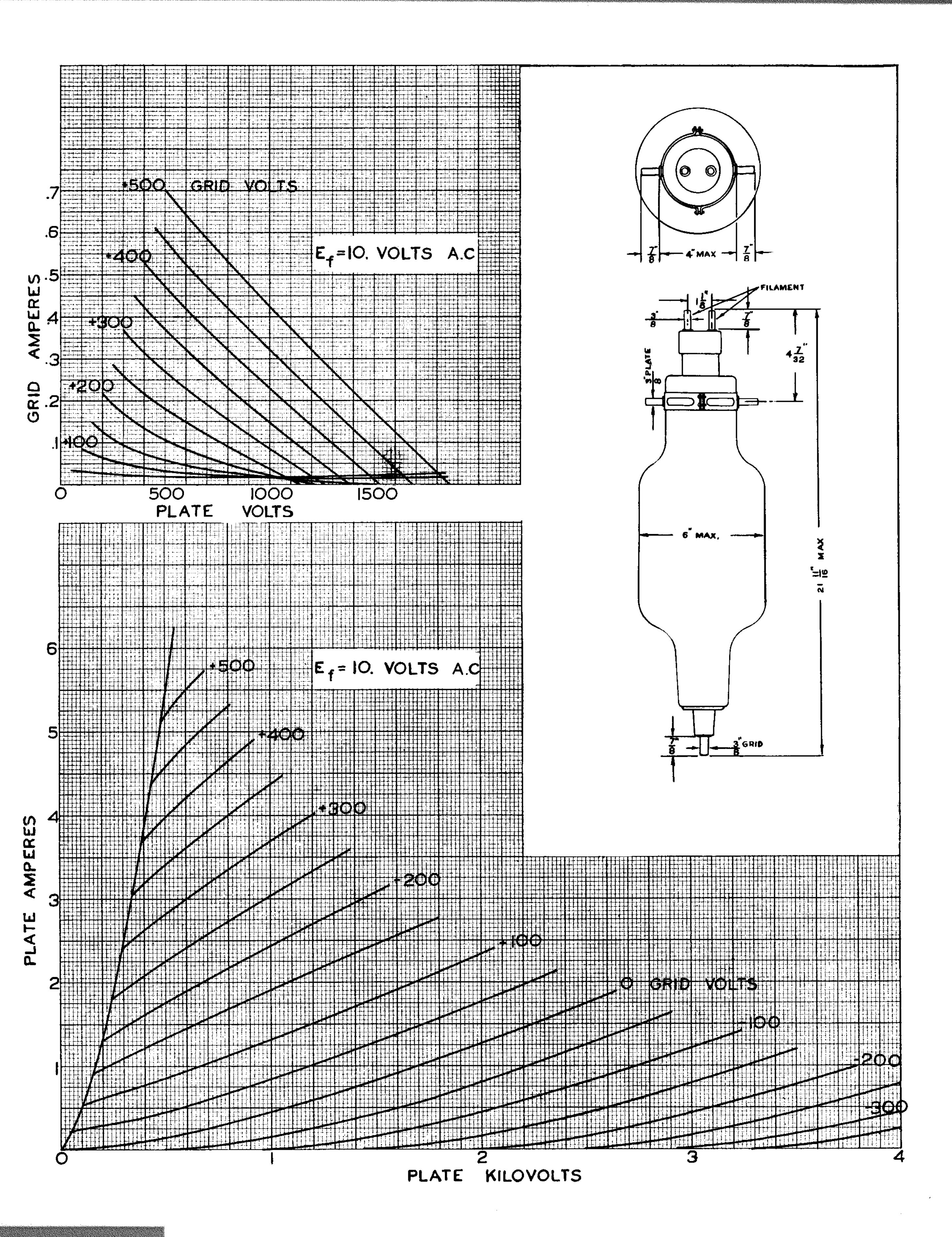
(Carrier conditions for use with a maximum modulation factor of 1.0)

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	—	10	10
D.C. Plate Voltage	2250	2250	1750
D.C. Grid Voltage	—750	—600	—500
Plate Load Resistance (ohms)	—	1300	1100
Peak R.F. Grid Voltage	—	1000	875
D.C. Plate Current (ma.)	800	780	715
Plate Input (watt)	1800	1750	1250
Plate Dissipation (watts)	800	450	350
D.C. Grid Current (Approx.) (ma.)	100	80	80
Driving Power (Approx.) (watts)	—	75	65
Plate Power Output (watts)	—	1300	900
Frequency Limit for Above Operation (mc.)	20	20	30
F.C.C. Broadcast Rating (watts)	750	—	750

R.F. Power Amplifier—Class C—Telegraphy

Key down conditions without modulation.

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	—	10	10
D.C. Plate Voltage	3000	3000	2500
D.C. Grid Voltage	—750	—600	—400
Plate Load Resistance (ohms)	—	1550	1150
Peak R.F. Grid Voltage	—	1000	800
D.C. Plate Current (ma.)	1000	900	1000
Plate Input (watts)	3000	2700	2500
Plate Dissipation (watts)	1200	700	750
D.C. Grid Current (Approx.) (ma.)	150	60	70
Driving Power (Approx.) (watts)	—	55	65
Plate Power Output (watts)	—	2000	1750
Frequency Limit for Above Operation (mc.)	20	20	20



+500 GRID VOLTS
+400
+300
+200
+100
E_f=10. VOLTS A.C
GRID AMPERES
.7
.6
.5
.4
.3
.2
.1
0
500
1000
1500
PLATE VOLTS
+500
+400
+300
+200
+100
0 GRID VOLTS
-100
-200
-300
PLATE AMPERES
6
5
4
3
2
1
0
1
2
3
4
PLATE KILOVOLTS
FILAMENT
4" MAX
6" MAX.
$21\frac{11}{16}$" MAX
$4\frac{7}{32}$"
$\frac{3}{8}$" PLATE
$\frac{3}{8}$" GRID
$1\frac{1}{8}$"
$\frac{7}{8}$"
$\frac{3}{8}$"